**3GPP TSG- Meeting #**

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| *CR-Form-v12.3* |
| **CHANGE REQUEST** |
|  |
|  |  | **CR** |  | **rev** |  | **Current version:** |  |  |
|  |
| *For* [***HE******LP***](http://www.3gpp.org/3G_Specs/CRs.htm#_blank)*on using this form: comprehensive instructions can be found at* [*http://www.3gpp.org/Change-Requests*](http://www.3gpp.org/Change-Requests)*.* |
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| ***Proposed change affects:*** | UICC apps |  | ME |  | Radio Access Network | **X** | Core Network | **X** |

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|  |
| ***Title:***  |  |
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| ***Source to WG:*** |  |
| ***Source to TSG:*** | S5 |
|  |  |
| ***Work item code:*** |  |  | ***Date:*** |  |
|  |  |  |  |  |
| ***Category:*** |  |  | ***Release:*** |  |
|  | *Use one of the following categories:****F*** *(correction)****A*** *(mirror corresponding to a change in an earlier release)****B*** *(addition of feature),* ***C*** *(functional modification of feature)****D*** *(editorial modification)*Detailed explanations of the above categories canbe found in 3GPP [TR 21.900](http://www.3gpp.org/ftp/Specs/html-info/21900.htm). | *Use one of the following releases:Rel-8 (Release 8)Rel-9 (Release 9)Rel-10 (Release 10)Rel-11 (Release 11)…Rel-17 (Release 17)Rel-18 (Release 18)Rel-19 (Release 19) Rel-20 (Release 20)* |
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| ***Reason for change:*** | Simplify the mapping of structured attributes. Today multiple different possibilities are described, which only creates confusion and thus should be avoided. A single method shall be specified.Defining structured attributes directly into a list prohibits later reuse.YANG keyless lists create problems for some implementations, and do not allow later deviations to change the list to become writable, although that’s an allowed compatible change.Update terminology to follow TS 32.156; use “attribute field”. |
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| ***Summary of change:*** | Simplify mapping of structured attributes, disallow the use of YANG keyless lists. |
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| ***Consequences if not approved:*** | Confusion and incorrrect mapping of structured attributes. Implementation difficulties for keyless lists. |
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| ***Clauses affected:*** | 6.2.1.6, 6.2.12.1 |
|  |  |
|  | **Y** | **N** |  |  |
| ***Other specs*** |  | **X** |  Other core specifications  | TS/TR ... CR ...  |
| ***affected:*** |  | **X** |  Test specifications | TS/TR ... CR ...  |
| ***(show related CRs)*** |  | **X** |  O&M Specifications | TS/TR ... CR ...  |
|  |  |
| ***Other comments:*** |  |
|  |  |
| ***This CR's revision history:*** |  |

***First change***

#### 6.2.1.6 YANG constructs not to be used – not recommended

The following YANG constructs shall not be used in 3GPP YANG models as they are not available in the Stage 2 modeling terminology, thus not needed.

- anyxml

- rpc – use actions instead

- deviation

- keyless list. While the YANG language allows read-only lists without a key, this is known to cause implementation difficulties and hamper vendor adaptations of the model.

The following YANG statements should not be used in 3GPP YANG models:

- anydata. Whenever possible data should be modeled with list, leaf-list, leaf data nodes. In the rare case where the type of an attribute is unknown (E.g., an attribute that can be of any attribute type) the YANG “anydata” statement may be used.

***Next change***

#### 6.2.12.1 YANG Mapping

Structured attributes shall be mapped to a grouping containing the attribute fields; and a list using the grouping.

grouping pLMNIdGrp {

 description "PLMN-Id= Mobile Country Codes (MCC) &

 Mobile Network Codes(MNC)";

 leaf MCC {

 type t\_mcc;

 }

 leaf MNC {

 type t\_mnc;

 }

}

// attribute, structured with natural keys

list pLMNIdList {

 key "MCC MNC";

 config true;

 ordered-by user;

 min-elements 1;

 max-elements 5;

A

 uses pLMNIdGrp;

}

The usage of the config, ordered-by, min-elements, max-elements statements is dependent on the attribute’s properties and is described in other subclauses in clause 6.2. Here they are included just as examples.

// attribute, structured with dummy key idx

list pLMNIdList {

 key "idx";

 leaf idx { type uint32 ; }

 uses pLMNIdGrp;

}

YANG keys for the list shall be selected according to the following steps:

1) If the attribute is isUnique=true and according to the descriptions of the attributes-fields, one or a combination of some attribute-fields are unique, and all these attribute-fields are mandatory, this attribute-field(s) should be used as key(s) in YANG. (Note only mandatory attribute-fields should be considered as keys as declaring an attribute-field a key, makes it mandatory in YANG.)

2) If suitable key(s) cannot be found in step 1, or if using multiple attribute-fields as keys is deemed complicated, an additional dummy index shall be defined in YANG. The name of the dummy index shall be “idx” and shall have a type uint32 or uint64. The dummy key "idx" usually does not appear on stage 2.

***End of changes***